

What Is Claimed Is:

1. A method of manufacturing gypsum board, comprising:
applying compressed air to an input end of a tube, wherein the tube
includes the input end, an output end, and a venturi located between the input end
5 and the output end;
admitting foaming agent to the input end of the tube so as to form a
mixture of the compressed air and the foaming agent;
passing the mixture through the venturi and out the output end;
combining the mixture with gypsum and water to form a gypsum slurry;
10 and
casting the gypsum slurry onto a continuous web for forming a gypsum
board.
2. The method of claim 1, wherein a diameter of the tube decreases
between the input end and a region in the tube upstream of the venturi.
- 15 3. The method of claim 2, wherein the diameter decreases gradually
over a distance of greater than or equal to about six inches.
4. A method of manufacturing gypsum board, comprising:
applying compressed air to an input end of a tube, wherein the tube
includes the input end, an output end, and a tapered region between the input end
20 and the output end, wherein a diameter of the tube decreases in the downstream
direction in the tapered region;
admitting a foaming agent to the input end of the tube so as to form a
mixture of the compressed air and the foaming agent;
passing the mixture through the tapered region and out the output end;
25 combining the mixture with gypsum and water to form a gypsum slurry;
and

casting the gypsum slurry onto a continuous web for forming a gypsum board.

5. The method of claim 4, further comprising a venturi in the tube between the tapered region and the output end.

5 6. The method of claim 1, further comprising the step of adjusting a size of bubbles in the mixture output from the tube by adjusting a pressure of the air applied to the tube.

7. The method of claim 1, wherein the foaming agent is a nonprotenaceous surfactant.

10 8. The method of claim 1, wherein the interior of the tube is substantially smooth between the input end and the output end.

9. An apparatus for manufacturing gypsum board, comprising:
a foam generator including a tube having an input end, an output end,
and a venturi located between the input end and the output end;
15 a mixer for mixing gypsum powder and water into a gypsum slurry;
a passage for delivering the gypsum slurry to a facing sheet on a conveyor; and
a conduit for delivering foam from the foam generator to either the mixer or a portion of the apparatus between the mixer and the conveyor.

20 10. The apparatus of claim 9, wherein a diameter of the tube decreases in a region in the tube upstream of the venturi.

11. The apparatus of claim 10, wherein the diameter decreases gradually over a distance of greater than or equal to about six inches.

12. An apparatus for manufacturing gypsum board, comprising:
a foam generator including a tube having an input end, an output end,
5 and a tapered region located between the input end and the output end;
a mixer for mixing gypsum powder and water into a gypsum slurry;
a passage for delivering the gypsum slurry to a facing sheet on a
conveyor;
a conduit for delivering foam from the foam generator to either the
10 mixer or a portion of the apparatus between the mixer and the conveyor.

13. The apparatus of claim 9, wherein the interior of the tube is substantially smooth between the input end and the output end.